

IN THE CLAIMS:

For the convenience of the examiner, the complete listing of claims in the present application is provided below.

1. (Previously Presented) A method for execution by a microprocessor in response to receiving a single instruction, the method comprising:
receiving a first plurality of numbers and a second plurality of numbers; and
generating a third plurality of numbers, each of which is an absolute difference
between a number in the first plurality of numbers and a number in the second
plurality of numbers;
wherein the third plurality of numbers are saved in an entry in a register file;
wherein the above operations are performed in response to the microprocessor
receiving the single instruction.
2. (Original) A method as in claim 1 wherein an absolute difference between a first
number and a second number is computed using a method comprising:
producing a first intermediate number by subtracting the second number from the first
number;
producing a second intermediate number by subtracting the first number from the
second number; and
selecting a positive number from the first intermediate number and the second
intermediate number as the absolute difference between the first number and
the second number;
wherein the microprocessor is a media processor disposed on an integrated circuit
with a memory controller.

3. (Original) A method as in claim 2 wherein the first intermediate number and the second intermediate number are produced in parallel; and wherein the third plurality of numbers are generated substantially simultaneously.
4. (Previously Presented) A method as in claim 2 further comprising:
testing if an overflow occurs in producing the first intermediate number and the second intermediate number;
saturating the absolute difference between the first number and the second number if an overflow occurs.
5. (Previously Presented) A method as in claim 1 wherein the first plurality of numbers are received from a first entry in the register file.
6. (Previously Presented) A method as in claim 5 wherein the single instruction specifies a way to partition a string of bits in the first entry into the first plurality of numbers.
7. (Previously Presented) A method as in claim 5 wherein the single instruction specifies an index of the first entry in the register file.
8. (Canceled)
9. (Previously Presented) A method as in claim 1 wherein the single instruction specifies an index of the entry in the register file.

10. (Original) A method as in claim 1 wherein a type of each of the first and second pluralities of numbers is one of:
 - a) unsigned integer;
 - b) signed integer; and
 - c) floating point number.

11. (Original) A method as in claim 1 wherein a size of each of the first and second pluralities of numbers is one of:
 - a) 8 bits;
 - b) 16 bits; and
 - c) 32 bits.

12. (Previously Presented) A machine readable media containing an executable computer program instruction which when executed by a digital processing system causes said system to perform a method comprising:
receiving a first plurality of numbers and a second plurality of numbers; and
generating a third plurality of numbers, each of which is an absolute difference
between a number in the first plurality of numbers and a number in the second
plurality of numbers;
wherein the third plurality of numbers are saved in an entry in a register file;
wherein the above operations are performed in response to a microprocessor of the
digital processing system receiving the instruction.

13. (Original) A media as in claim 12 wherein an absolute difference between a first number and a second number is computed using a method comprising:
producing a first intermediate number by subtracting the second number from the first number;
producing a second intermediate number by subtracting the first number from the second number;
selecting a positive number from the first intermediate number and the second intermediate number as the absolute difference between the first number and the second number.
14. (Original) A media as in claim 13 wherein the first intermediate number and the second intermediate number are produced in parallel.
15. (Previously Presented) A media as in claim 12 wherein the method further comprises:
testing if an overflow occurs in producing the first intermediate number and the second intermediate number;
saturating the absolute difference between the first number and the second number if an overflow occurs.
16. (Previously Presented) A media as in claim 12 wherein the first plurality of numbers are received from a first entry in the register file.
17. (Previously Presented) A media as in claim 16 wherein the instruction specifies a way to partition a string of bits in the first entry into the first plurality of numbers.

18. (Previously Presented) A media as in claim 16 wherein the instruction specifies an index of the first entry in the register file.
19. (Canceled)
20. (Previously Presented) A media as in claim 12 wherein the instruction specifies an index of the entry in the register file.
21. (Original) A media as in claim 12 wherein a type of each of the first and second pluralities of numbers is one of:
 - a) unsigned integer;
 - b) signed integer; and
 - c) floating point number.
22. (Original) A media as in claim 12 wherein a size of each of the first and second pluralities of numbers is one of:
 - a) 8 bits;
 - b) 16 bits; and
 - c) 32 bits.
23. (Previously Presented) An execution unit in a microprocessor, the execution unit comprising:
 - a first circuit configured to receive a first plurality of numbers;
 - a second circuit configured to receive a second plurality of numbers; and

a third circuit coupled to the first circuit and the second circuit, the third circuit, in response to the microprocessor receiving a single instruction, generating a third plurality of numbers, each of which is an absolute difference between a number in the first plurality of numbers and a number in the second plurality of numbers

wherein the microprocessor is a media processor disposed on an integrated circuit with a memory controller.

24. (Original) An execution unit as in claim 23 wherein the third circuit comprises a plurality of units, each of the plurality of units comprising:
- a fourth circuit configured to generate a first intermediate number by subtracting a number in the second plurality of numbers from a number in the first plurality of numbers;
 - a fifth circuit configured to generate a second intermediate number by subtracting a number in the first plurality of numbers from a number in the second plurality of numbers; and
 - a sixth circuit coupled to the fourth circuit and the fifth circuit, the sixth circuit selecting a positive number from the first intermediate number and the second intermediate number as an absolute difference between the first number and the second number.
25. (Original) A processing system comprising an execution unit as in claim 23.
26. (Previously Presented) An execution unit in a microprocessor, the execution unit comprising:

means for receiving a first plurality of numbers and a second plurality of numbers;
and
means for generating a third plurality of numbers, each of which is an absolute
difference between a number in the first plurality of numbers and a number in
the second plurality of numbers;
wherein the third plurality of numbers are saved in an entry in a register file;
wherein the above means perform operations in response to the microprocessor
receiving a single instruction.

27. (Original) An execution unit as in claim 26 wherein an absolute difference between a
first number and a second number is computed using a unit comprising:
means for producing a first intermediate number by subtracting the second number
from the first number;
means for producing a second intermediate number by subtracting the first number
from the second number;
means for selecting a positive number from the first intermediate number and the
second intermediate number as the absolute difference between the first
number and the second number.
28. (Original) An execution unit as in claim 27 wherein the first intermediate number and
the second intermediate number are produced in parallel.
29. (Previously Presented) An execution unit as in claim 27 further comprising:
means for testing if an overflow occurs in producing the first intermediate number and
the second intermediate number;

means for saturating the absolute difference between the first number and the second number if an overflow occurs.

30. (Previously Presented) An execution unit as in claim 26 wherein the first plurality of numbers are received from a first entry in the register file.
31. (Previously Presented) An execution unit as in claim 30 wherein the single instruction specifies a way to partition a string of bits in the first entry into the first plurality of numbers.
32. (Previously Presented) An execution unit as in claim 30 wherein the single instruction specifies an index of the first entry in the register file.
33. (Canceled)
34. (Previously Presented) An execution unit as in claim 26 wherein the single instruction specifies an index of the entry in the register file.
35. (Original) An execution unit as in claim 26 wherein a type of each of the first and second pluralities of numbers is one of:
 - a) unsigned integer;
 - b) signed integer; and
 - c) floating point number.

36. (Original) An execution unit as in claim 26 wherein a size of each of the first and second pluralities of numbers is one of:
- a) 8 bits;
 - b) 16 bits; and
 - c) 32 bits.
37. (Previously Presented) A method as in claim 1, wherein a type of each of the first and second pluralities of numbers is floating point number.
38. (Previously Presented) A media as in claim 12, wherein the microprocessor is a media processor disposed with a memory controller on an integrated circuit.
39. (Previously Presented) An execution unit as in claim 26 further comprising:
means for testing if an overflow occurs.
40. (Previously Presented) An execution unit as in claim 23, wherein the memory controller is usable to access memory not disposed on the integrated circuit.
41. (Previously Presented) An execution unit as in claim 40, wherein the memory controller is usable by a central processing unit (CPU) not disposed on the integrated circuit to access the memory.